New MINIMAG™ Magnetic Stripe Reader

Port Powered

Quickstart Manual

IDTECH®
Value through Innovation

ID TECH
10721 Walker Street
Cypress, California 90630
(714) 761-6368
www.idtechproducts.com

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AGENCY APPROVED

Specifications for subpart B of part 15 of FCC rule for a Class A computing device.

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MESSAGE DATA FORMAT

<SS1><DATA1><ES><SS2><DATA2><ES><SS3><DATA3><ES><CR>

Where <SS1>, <SS2>, and <SS3> are start sentinels for Track 1, Track 2, and Track 3, and <ES> is the end sentinel for all tracks.

ISO format:	<SS1> is %	<SS2> is ;
	<SS3> is +	<ES> is ?
CADMV format:	<SS1> is %	<SS2> is ;
	<SS3> is !	<ES> is ?

<DATAX> is the decoded data for Track X. It is the character "E" if the magnetic data on Track X is not valid.

RS-232 PARAMETERS

Baud Rate	9600
Data Bits	8
Parity	None
Stop Bits	1
Hand-Shaking	X-ON/X-OFF (11h/13h)

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SPECIFICATIONS

Power Requirements:	5 to 12 VDC/7mA.
Operating Current:	5 mA typical (including LED)<9mA peak (<1ms).
Operating Temperature:	32° F to 131° F (0° C to 55° C).
Storage Temperature:	-22° F to 158° F (-30° C to 70° C).
Relative Humidity:	10% to 90% non-condensing.
Magnetic Head Life:	1,000,000 passes minimum.
Rail and Cover Life:	1,000,000 passes minimum.
Magnetic Stripe Encoding & Formats:	Two-frequency coherent phase (F2F) compatible with ISO 7811 ANSI, AAMVA, and California DMV.
Maximum Number of Tracks:	3 tracks.
Swipe Speed:	3 to 60 inches per second, bidirectional.
Card Thickness:	.015 to .045 inches.
Dimensions: Length:	3.56 inches (90mm). Width: 1.34 inches (34mm). Height: 1.10 inches (28mm).
Weight:	5.5 oz. (with cable).
Cable Length:	6-foot straight cable.

TROUBLE SHOOTING PROCEDURES

The troubleshooting process can be simplified by reviewing these reader operations.

Once it has been confirmed that the unit is correctly powered, swipe a credit card. The LED will go off while decoding, then light green to indicate a “good read,” or red to indicate a “bad read.”

Once the unit has indicated a “good read,” then proceed to check the interface configuration.

Installation of the reader is generally easy and trouble free, here are some considerations if problems occur.

Does the host COM port baud rate, number of data bits & parity match the reader? See RS232 Parameters.

Is the host set-up for card reader operation and is the card reader application running? Check the application set-up parameters.

Does the configuration of the reader’s magnetic stripe data output match the host application data input requirements? The application may need to be configured to match.

OPERATION

1. Connect the MiniMag reader cable to the 9-pin male serial port on a computer. Insure the reader cable connector is fully seated with the computer.

2. Run an RS-232 communication program (such as HyperTerminal). Select the serial port to which the reader cable has been connected. The application needs to open the RS-232 port with DSR set to HIGH. (A typical communication program sets DSR to HIGH by default.)

3. The green LED will light to indicate the reader is powered.

4. Set the baud rate at 9600, 8 data bits, 1 stop bit, and no parity.

5. The LED is normally GREEN (reader ready). Slide a card, in either direction, through the reader slot, with the magnetic stripe facing the magnetic head (opposite the LED side of the reader).

6. The LED will be off during a card read swipe. The GREEN LED will be on after a good read operation; otherwise, the LED will be RED for 1/2 second, then return to GREEN.

7. The data on the card will be shown on the screen. Check the communication parameters if the data on the screen is not correct.

NOTE: Sending data to the reader while swiping a card will cause a bad read.

DESCRIPTION

The MiniMag™ compact magnetic stripe reader can read 1, 2, or 3 tracks of magnetic stripe information. Power consumption is low; standard RS-232 ports can power it. Operating current is less than 9mA maximum for a 3-track configuration.

The decoding electronics are based on MagChip ASIC technology designed for use with magnetic stripe cards encoded with F2F ANSI and ISO-conforming data. The MiniMag reliably decodes data encoded within ANSI and ISO standards, on both high and low coercivity magnetic media. The circuit is designed to read cards demagnetized down to 30% or 40% of ISO and ANSI signal levels, on Track 1 and Track 3 or Track 2 respectively. These reading characteristics are designed to insure that the MiniMag will reliably read ‘real world’ cards.

In order to insure reliable reading under varying conditions, the MiniMag will read magnetic media at speeds from 3 inches per second (IPS) to 60 IPS with typical accelerations. The output is standard RS-232.

HOST CONNECTIONS

The Port-Powered MiniMag reader is connected to a 9-pin male serial port on a host (such as a PC) using a DB9 female connector. Pinout designations are as follows:

PIN	SIGNAL	
2	TXD	
3	RXD	
4	DSR	(Supply Voltage in)
5	GND	

POWER-ON INITIALIZATION

The MiniMag will always transmit an identification string within 2 seconds after it powers up. The identification string has the following format:

<compressed part number><revision information>

The <compressed part number> is eight characters and the <revision information> is three characters.

SLEEP & WAKE-UP

The reader uses a sleep mode to save power when not in use. The reader wakes-up when a card is swiped. After the card data is transmitted the reader returns to the sleep mode. The LED will remain on to show the “ready to read” condition.

The reader also wakes-up 5ms after receiving a character from the RS232 port. The reader will stay awake for about 100ms to receive any commands from the host. The reader returns to sleep mode after commands are processed.